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MAIL STOP APPEAL
BRIEF - PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Jan T. Miksovsky	Attorney Docket No. MSFT118568
Application No.:	10/083,022	Group Art Unit: 2121
Filed:	February 26, 2002	Examiner: Joseph P. Hirl
Title:	EXPERT SYSTEM FOR GENERATING USER INTERFACES	

TRANSMITTAL OF APPEAL BRIEF

Seattle, Washington 98101

March 16, 2005

TO THE COMMISSIONER FOR PATENTS:

Enclosed herewith for filing in the above-identified application is an Appeal Brief. Also enclosed is our Check No. 162095 in the amount of $500.00. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16, 1.17 and 1.18 which may be required during the entire pendency of the application, or credit any overpayment, to Deposit Account No. 03-1740. This authorization also hereby includes a request for any extensions of time of the appropriate length required upon the filing of any reply during the entire prosecution of this application. A copy of this sheet is enclosed.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed envelope as first class mail with postage thereon fully prepaid and addressed to Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the below date.

Date: March 16, 2005 Shelley K. Gaar

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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APPELLANT'S APPEAL BRIEF

Seattle, Washington
March 16, 2005

TO THE COMMISSIONER FOR PATENTS:

This Brief is in support of a Notice of Appeal Filed January 18, 2005, to the Board of Patent Appeals and Interferences appealing the decision, dated November 16, 2004, of the Primary Examiner finally rejecting Claims 13-31.

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TABLE OF CONTENTS

		Page
I.	REAL PARTY IN INTEREST	1
II.	RELATED APPEALS AND INTERFERENCES	2
III.	STATUS OF CLAIMS	3
IV.	STATUS OF AMENDMENTS	4
V.	SUMMARY OF CLAIMED SUBJECT MATTER	5
	A. Background of the Invention	5
	B. Summary of Exemplary Subject Matter	6
	C. Explanation of Various Subject Matter Defined in the Claims	7
VI.	GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL	13
VII.	ARGUMENT	14
	A. Summary of the Bertrand Reference	14
	B. Rejection Under 35 U.S.C. § 102(e) in View of the Teachings of Bertrand	16
	1. Independent Claims 13 and 31	16
	a. The Examiner Has Utterly Failed to Establish a *Prima Facie* Case of Anticipation by Neglecting to Show That Every Claim Limitation Is Taught by Bertrand *et al.*	17
	b. To Anticipate an Invention, the Prior Art Must Teach the Identical Invention	19
	c. Only Through A Distortion of The Teachings of Bertrand *et al.* Can the Examiner Argue Identity of Invention	21

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d. Instead of Giving the Claimed Invention the Broadest Reasonable Interpretation Consistent with the Specification, the Examiner Gave Bertrand *et al.* the Broadest, Most Unreasonable Interpretation 22

2. Independent Claim 14 24

3. Dependent Claim 15 26

4. Dependent Claim 16 28

5. Dependent Claim 17 30

6. Dependent Claim 18 31

7. Independent Claims 19 and 25 32

8. Dependent Claims 20 and 26 34

9. Dependent Claims 21 and 27 34

10. Dependent Claims 22 and 28 35

11. Dependent Claims 23 and 29 35

12. Dependent Claims 24 and 30 36

C. A Recap of the Claimed Invention Clearly Shows that the Cited and Applied References Do Not Teach, Let Alone Render Unpatentable, the Claimed Invention 37

VIII. CLAIMS APPENDIX 40

IX. EVIDENCE APPENDIX 47

X. RELATED PROCEEDINGS APPENDIX 48

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I. REAL PARTY IN INTEREST

The subject application is owned by Microsoft Corporation of Redmond, Washington.

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II. RELATED APPEALS AND INTERFERENCES

Upon information and belief, Appellant does not have any knowledge of related appeals or interferences that may directly affect or have a bearing on the decision of the Board of Patent Appeals and Interferences (hereinafter "the Board") in the pending Appeal.

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III. STATUS OF CLAIMS

On February 26, 2002, Appellant filed the pending patent application including Claims 1-13. On July 05, 2002, Appellant filed a preliminary amendment, cancelling Claims 1-11, and adding Claims 14-31. On May 14, 2004, the Examiner issued a first Office Action rejecting Claims 12-31. On August 16, 2004, Appellant filed an Amendment and Response in which Claim 12 was canceled and Claim 17 was amended. On November 16, 2004, the Examiner issued a second Office Action, finally rejecting Claims 13-31.

This Appeal follows in which Appellant entreats the Board to reverse the final rejection of Claims 13-31. The claims on appeal are set forth in Appendix VIII.

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IV. STATUS OF AMENDMENTS

No amendment has been filed subsequent to the final rejection.

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V. SUMMARY OF CLAIMED SUBJECT MATTER

Prior to discussing Appellant's invention, Appellant sets forth a brief background of the invention to help the Board better appreciate Appellant's invention. The following background and the discussions of the disclosed embodiments of Appellant's invention are not provided to define the scope or interpretation of any of the appealed claims.

A. Background of the Invention

A user interface is a portion of a program or an operating system through which a user can instruct a computing device to accomplish a result and through which the device can convey information to the user. User interfaces can be constructed directly in the programming languages used by software programmers, but are more often constructed using specialized user interface development tools. For example, graphical user interfaces are often constructed using a tool called a forms package. A forms package typically presents the programmer with a screen (also called a form) that approximates what the user will see. The forms package allows the programmer to add individual graphical user interface controls (e.g., buttons, text entry boxes, list boxes) to the screen, and arrange the controls on the screen.

A graphical user interface for a program may consist of one or many screens. Forms packages allow the programmer complete freedom in constructing user interfaces with whatever screens the programmer desires. However, with this freedom comes the opportunity to make many mistakes. The programmer may create a user interface that is too complex for its users to understand and use properly. The programmer may have inadvertently created a user interface with bugs. An example of a bug is failing to handle correctly the entire range of possible input conditions by users. To reduce the likelihood of problems, programmers typically have learned to manually follow user interface guidelines in *de facto* conventions that suggest how user interfaces should appear and behave. As an example of the conventions, consider the standard

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placement of the OK button and the CANCEL button, which typically appear beneath other user interface controls. This convention stems from the fact that a user will interact with other user interface controls first and either the OK button or the CANCEL button second, and that people generally read a screen from top to bottom. It is unacceptable, therefore, to put the OK button or the CANCEL button at the top of the screen above other user interface controls, because a user would be likely to press the OK button or the CANCEL button before selecting an appropriate user interface option.

Portentously, the decision as to which control should be used is left entirely to the programmer. The programmer must evaluate the situation at hand, compare it to the available user interface guidelines, if any, and conventions, and then make an appropriate selection. Failure to select the appropriate user interface pattern may risk confusing users. Complicating the programmer's decision is that, at the time the programmer is writing the program, the programmer is typically unable to know the exact conditions under which the user interface will be used. A program may need to offer the user a list of choices where the number of choices varies greatly depending upon factors that change (e.g., the program needs to display a list of people currently connected to a computer network). The programmer is often forced to make bad decisions based on a theoretical or estimated range of values for such a factor. The decision made at the time of writing the program may result in a user interface that is inappropriate in practice.

B. Summary of Exemplary Subject Matter

Applicant's invention is directed to a computer-based system, method, and computer-readable medium for moving much of the burden of identifying and constructing an appropriate user interface pattern to an expert system, which is programmed to follow guidelines, conventions, and principles of user interface design. A programmer writes an application in a

traditional manner, but does not need to create a complete user interface for the application. Instead, the programmer writes code to reflect his intentions for the purpose of the user interface and these pieces of code invoke the expert system, which completes the user interface of the application. The expert system generates an appropriate user interface on the fly and returns this interface to the application. The application then invokes the user interface, which controls user interaction. The user interface communicates with the application as necessary. The user interface eventually returns control to the application when the user interface receives some indication from the user's interaction. Instead of generating the user interface on the fly, alternatively, the expert system generates and stores the user interface for later use during run time of the application. The programmer can use the expert system to generate an application's entire user interface or just a portion of it.

C. Explanation of Various Subject Matter Defined in the Claims

Regarding the claims, independent Claim 13 is directed to a method. See the pending specification at pages 19-20 and FIGURE 5. Claim 13 defines a method of producing a user interface for an application running on a computer having an associated display. The method recites, in response to user interface designer inputs, that the application produces at least one intention. The at least one intention has an associated set of parameters. Moreover, the method further recites supplying said at least one intention and its associated set of parameters to an expert system. Furthermore, the method recites in response to receiving said at least one intention and its associated set of parameters, the expert system selects a code module from a multitude of code modules; selects a rule from a set of rules within the selected code module; and generates user interface instructions from a template associated with the selected rule. Additionally, the method supplies the user interface instructions to the application. Also, the

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method in response to receiving the user interface instructions, causes the application to produce a user interface on the display.

Independent Claim 14 is directed to a system. See the pending specification at pages 13-17 as well as FIGURE 3B. Independent Claim 14 is directed to a system for generating user interfaces so that a user may interact with a computer system. The system comprises an application that includes an incomplete user interface and is adapted to store multiple intentions of a user interface designer of the application. Each intention includes a set of parameters and at least one of posing a question to the user, presenting a piece of information to the user, and defining a task for the user to perform. The incomplete user interface of the application is completed when the one or more intentions are realized. The system further comprises an expert system including one or more components for realizing the multiple intentions. The expert system receives one of the multiple intentions and each received intention identifies and activates a corresponding component for realizing the received intention. Each corresponding component programmatically comprises a set of rules extracted from guidelines, conventions, and principles of user interface design. The set of parameters supplied with each received intention aids the corresponding component to choose and execute a rule from the set of rules. Each rule of Claim 14 produces a user interface from a template different from other templates used by other rules.

Claims 15-18 are dependent from independent Claim 14 and are directed to further limitation of the system described above. Claim 15 is dependent on Claim 14 and recites that the produced user interface includes at least one of a graphical user interface, a command-line interface, and an audio user interface. Claim 16 is dependent on Claim 14 and recites a source of external factors. The source of external factors contains information related to the operating environment of the application as well as the background of the user so as to aid the corresponding component to choose and execute a rule from the set of rules. Claim 17 is

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dependent on Claim 16 and recites that each external factor includes at least one of the type of computer on which the application is running, the type of operating system on which the application is running, the types of available input devices, the types of available output devices, and the background of the user. Claim 18 is dependent on Claim 14 and recites that each parameter from the set of parameters includes at least one of textual information, a set of choices from which the user is expected to make a selection, pieces of data which the user is allowed to manipulate, a default response to a question posed by the user, an indication that the user is required to respond to the question, an indication that the user may opt out from responding to the question, a type of data that is expected to be received in response to an interaction with the user, a set of constraints on the dimensions of the generated user interface, and an indication of the visual style which the generated user interface may take.

Independent Claim 19 is directed to a method. See the pending specification at pages 13-15, 17, and 19-20 as well as FIGURE 5. Independent Claim 19 is a method for implementing the method of generating user interfaces by an expert system for a user to interact with a computer system. The method comprises an act of receiving a user interface goal by the expert system. The user interface goal includes at least one of a question to be posed to the user, a piece of information to be communicated to the user, and a task to be performed by the user. The method further recites an act of receiving a set of parameters by the expert system. Each parameter includes at least one of information for presenting to the user, information for the task to be performed by the user, and information for constraining the generated user interface. The method yet further recites an act of generating a user interface by selecting a code module from a set of code modules. Each code module is designed to generate user interfaces from multiple templates. The act of selecting a code module includes selecting a rule from a set of rules extracted from guidelines, conventions, and principles of user interface design. The act of

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selecting a rule is aided by the set of parameters. The user interface is produced by the method of Claim 19 from a template when the selected rule is executed.

Claims 20-24 are dependent from independent Claim 19 and are directed to further limitation of the method described above. Claim 20 is dependent on Claim 19 and recites an act of examining selectively a set of external factors by the expert system. Each factor is selected from the operating environment of the computer system and the background of the user. The act of selecting a rule is further aided by the set of external factors. Claim 21 is dependent on Claim 19 and recites that a user interface goal includes at least one of making the user supply a single string of text, making the user supply a single number, making the user pick a single item from a list, making the user pick several items from a list, making the user arrange the items in a list in a preferred order, making the user manage a list of items, making the user organize items in a given structure, and making the user apply one or more operations on a selection of items in a list. Claim 22 is dependent on Claim 19 and recites that the method is executed at run time while other applications are running. Claim 23 is dependent on Claim 19 and recites that the method is executed at design time so that user interfaces generated by the method are stored on storage media. Claim 24 is dependent on Claim 19 and recites that the generated user interface includes a pagefunction.

Independent Claim 25 is directed to computer-readable medium. See the pending specification at pages 13-15, 17, and 19-20 as well as FIGURE 5. Independent Claim 25 is a computer-readable medium having instructions stored thereon for implementing a method of generating user interfaces by an expert system for a user to interact with a computer system. The method comprises an act of receiving a user interface goal by the expert system. The user interface goal includes at least one of a question to be posed to the user, a piece of information to be communicated to the user, and a task to be performed by the user. The method further recites

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an act of receiving a set of parameters by the expert system. Each parameter includes at least one of information for presenting to the user, information for the task to be performed by the user, and information for constraining the generated user interface. The method yet further recites an act of generating a user interface by selecting a code module from a set of code modules. Each code module is designed to generate user interfaces from multiple templates. The act of selecting a code module includes selecting a rule from a set of rules extracted from guidelines, conventions, and principles of user interface design. The act of selecting a rule is aided by the set of parameters. The user interface is produced by the method of Claim 25 from a template when the selected rule is executed.

Claims 26-30 are dependent from independent Claim 25 and are directed to further limitation of the method described above. Claim 26 is dependent on Claim 25 and recites an act of examining selectively a set of external factors by the expert system. Each factor is selected from the operating environment of the computer system and the background of the user. The act of selecting a rule is further aided by the set of external factors. Claim 27 is dependent on Claim 25 and recites that a user interface goal includes at least one of making the user supply a single string of text, making the user supply a single number, making the user pick a single item from a list, making the user pick several items from a list, making the user arrange the items in a list in a preferred order, making the user manage a list of items, making the user organize items in a given structure, and making the user apply one or more operations on a selection of items in a list. Claim 28 is dependent on Claim 25 and recites that the method is executed at run time while other applications are running. Claim 29 is dependent on Claim 25 and recites that the method is executed at design time so that user interfaces generated by the method are stored on storage media. Claim 30 is dependent on Claim 25 and recites that the generated user interface includes a pagefunction.

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Independent Claim 31 is directed to a computer-readable medium. See the pending specification at pages 19-20 and FIGURE 5. Claim 13 defines a computer-readable medium having instructions for implementing a method of producing a user interface for an application running on a computer having an associated display. The method recites, in response to user interface designer inputs, that the application produces at least one intention. The at least one intention has an associated set of parameters. Moreover, the method further recites supplying said at least one intention and its associated set of parameters to an expert system. Furthermore, the method recites in response to receiving said at least one intention and its associated set of parameters, the expert system selects a code module from a multitude of code modules; selects a rule from a set of rules within the selected code module; and generates user interface instructions from a template associated with the selected rule. Additionally, the method supplies the user interface instructions to the application. Also, the method in response to receiving the user interface instructions, causes the application to produce a user interface on the display.

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VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 13-31 are rejected under 35 U.S.C. § 102(e) as being anticipated by the teachings of U.S. Publication 2002/0069189 (hereinafter "Bertrand *et al.*").

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VII. ARGUMENT

As discussed below, the Examiner has failed to establish a *prima facie* case of anticipation. To establish *prima facie* anticipation of a claimed invention, each and every element arranged as in the claim must be found in a single prior art reference. *See* M.P.E.P § 2131. The applied and cited reference does not teach, among many other features, the feature of "in response to receiving said at least one intention and its associated set of parameters, the expert system...generating user interface instructions from a template associated with the selected rule..." as recited in independent Claims 13 and 31. The applied and cited reference also does not teach the feature of "an application including an incomplete user interface...the incomplete user interface of the application being completed when one or more intentions are realized..." as recited in independent Claim 14. Moreover, the applied and cited references does not teach the feature of "generating a user interface by selecting a code module...the act of selecting a code module including selecting a rule from a set of rules extracted from guidelines, conventions, and principles of user interface design..." as recited in independent Claims 19 and 25. For better appreciation of the arguments below, Appellant summarizes the applied reference.

A. Summary of the Bertrand Reference

Similar to various embodiments of Appellant's claimed invention, the system of Bertrand *et al.* uses an expert system, but the similarity ends there. The system of Bertrand *et al.* completely lacks the generation of user interface instructions by the expert system. The system of Bertrand *et al.* focuses on a goal-based educational system with personalized coaching. See the Title of the Invention of Bertrand *et al.* More specifically, the system of Bertrand *et al.* is directed to an educational tutorial system that analyzes student inputs to determine appropriate feedback to teach new skills. See the Field of the Invention of Bertrand *et al.* The feedback of Bertrand *et al.* includes text feedback, multimedia feedback, and reference material feedback.

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The system of Bertrand *et al.* uses feedback to correct the faulty business habits of students and raise the students' general business competence. There can be no reasonable interpretation that feedback of Bertrand *et al.* is somehow identical to applicant's generation of user interfaces by the expert system.

The principal concerns of Bertrand *et al.* are that present educational expert systems often suffer from a lack of motivational aspects that result in a student becoming bored or ceasing to complete a training program. Current training programs use static, hard-coded feedback with some linear video and graphics, which are used to add visual appeal and illustrate concepts. These educational systems typically support one correct answer and navigation through the educational systems is only supported through a single defined path resulting in a two-dimensional generic interaction. No business model support can be provided and only a single instance of feedback is provided to the student regarding whether a selected response is correct or not correct. The essence of the teachings of Bertrand *et al.* is that current educational tutorial systems do not architect real business simulations into the rules, which are used by the expert system, to provide a creative learning environment to a user. Bertrand *et al.* has nothing to do with the generation of user interfaces as in various embodiments of applicant's invention.

To solve these perceived problems associated with current educational tutorial systems, Bertrand *et al.* provides a goal-based learning system, which uses a rule-based expert training system to provide a cognitive educational experience. It is truly a mystery what this has to do with the inventive subject matter of applicant's invention, which has to do with generating user interfaces that a user may use to interact with a computer system. The system of Bertrand *et al.* provides the user with a simulated environment that presents a business opportunity to understand and solve optimally. Mistakes are noted by the system of Bertrand *et al.* and remedial educational material is presented dynamically to build the necessary skills that a user requires for

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success in the business endeavor. In other words, the system of Bertrand *et al.* acts as a simulator to simulate a business environment in which a user is free to experiment to gain skills without real world financial repercussions. A robust business model is allegedly provided by the system of Bertrand *et al.* for supporting realistic activities and allowing users to experience real world consequences for their actions and decisions in a tutorial system, which analyzes student inputs and determines appropriate feedback to teach new business skills.

B. Rejection Under 35 U.S.C. § 102(e) in View of the Teachings of Bertrand

1. Independent Claims 13 and 31

The applied and cited references do not teach, among many other limitations, the claimed limitation of "in response to receiving said at least one intention and its associated set of parameters, the expert system...generating user interface instructions from a template associated with the selected rule..." as recited in independent Claims 13 and 31. The Examiner copied Appellant's claimed language in his Final Office Action and cited various paragraph numbers of Bertrand *et al.* where the claimed features are supposed be found but Appellant cannot find them. The Examiner also has failed to explain why the claim limitations cannot be found except flatly indicating that "[t]he Examiner has full latitude to interpret each claim in the broadest reasonable sense." See p. 10 of the Final Office Action.

Claims 13 and 31 succinctly and respectively define a method and a computer-readable medium containing instructions for implementing the method of producing a user interface for an application running on a computer having an associated display. The method recites, in response to user interface designer inputs, that the application produces at least one intention. The at least one intention has an associated set of parameters. Moreover, the method further recites supplying said at least one intention and its associated set of parameters to an expert system. Furthermore, the method recites in response to receiving said at least one intention and

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its associated set of parameters, the expert system selects a code module from a multitude of code modules; selects a rule from a set of rules within the selected code module; and generates user interface instructions from a template associated with the selected rule. Additionally, the method supplies the user interface instructions to the application. Also, the method in response to receiving the user interface instructions, causes the application to produce a user interface on the display. Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

a. The Examiner Has Utterly Failed to Establish a *Prima Facie* Case of Anticipation by Neglecting to Show That Every Claim Limitation Is Taught by Bertrand *et al.*

Not a single claim limitation is taught or suggested by Bertrand *et al.* As a first example, the system of Bertrand *et al.* completely lacks the feature of "in response to user interface designer inputs, said application producing at least one intention, said at least one intention having an associated set of parameters," as recited in Claims 13 and 31. The Examiner argued that this limitation is disclosed at paragraph 0324 of Bertrand *et al.* To fully and fairly understand what Bertrand *et al.* actually teaches, Appellant has set forth in full the cited paragraph 0324 of Bertrand *et al.*:

> In accordance with a preferred embodiment, an Intelligent Coaching Agent Tool (ICAT) was developed to standardize and simplify the creation and delivery of feedback in a highly complex and open-ended environment. Feedback from a coach or tutor is instrumental in guiding the learner through an application. Moreover, by diagnosing trouble areas and recommending specific actions based on predicted student understanding of the domain student comprehension of key concepts is increased. By

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> writing rules and feedback that correspond to a proven feedback strategy, consistent feedback is delivered throughout the application, regardless of the interaction type or of the specific designer/developer creating the feedback. The ICAT is packaged with a user-friendly workbench, so that it may be reused to increase productivity on projects requiring a similar rule-based data engine and repository.

There is nothing in paragraph 0324 of Bertrand *et al.* that discloses the claimed limitation "in response to user interface designer inputs, said application producing at least one intention, said at least one intention having an associated set of parameters," as recited in Claims 1 and 31. Paragraph 0324 of Bertrand *et al.* appears to discuss feedback to students but this has nothing to do with the claimed invention.

As a second example, the system of Bertrand *et al.* completely lacks the feature of "supplying said at least one intention and its associated set of parameters to an expert system," as recited in Claims 13 and 31. The Examiner argued that this limitation is disclosed at paragraph 0326 of Bertrand *et al.* To fully and fairly understand what Bertrand *et al.* actually teaches, Appellant has set forth in full the cited paragraph 0326 of Bertrand *et al.*:

> The Intelligent Coaching Agent Tool (ICAT) is a suite of tools--a database and a Dynamic Link Library (DLL) run-time engine--used by designers to create and execute just-in-time feedback of Goal Based training. Designers write feedback and rules in the development tools. Once the feedback is set, the run-time engine monitors user actions, fires rules and composes feedback which describes the business deliverable.

There is also nothing in paragraph 0326 of Bertrand *et al.* that discloses the claimed limitation "supplying said at least one intention and its associated set of parameters to an expert

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system," as recited in Claims 13 and 31. Paragraph 0326 of Bertrand *et al.* appears to discuss feedback provided to students that describes business deliverable but this has nothing to do with the claimed invention.

As a third example, the system of Bertrand *et al.* completely lacks the feature of "in response to receiving said at least one intention and its associated set of parameters, the expert system ... generating user interface instructions from a template associated with the selected rule," as recited in Claims 13 and 31. The Examiner argued that this limitation is disclosed at paragraph 0326 of Bertrand *et al.* As paragraph 0326 can be viewed in its entirety above, there is nothing in paragraph 0326 that discloses the generation of user interface instructions by an expert system based on an intention. The Examiner also cryptically indicated that "EN" and "OOPS" disclose the claimed feature but Appellant can find no trace of "EN" or "OOPS" in the Bertrand *et al.* reference.

b. To Anticipate an Invention, the Prior Art Must Teach the Identical Invention

Because Bertrand *et al.* teaches nothing about the claimed invention, it is not prior art. As specified by M.P.E.P. § 2131.01, "The identical invention must be shown in as complete detail as is contained in the . . . claim," citing favorably *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989) (emphasis provided). Because the Examiner has failed to show that Bertrand *et al.* discloses the identical invention as claimed by Appellant, no *prima facie* case of anticipation has been established by the Examiner.

Ignoring *Richardson*, the Examiner has refused to recognize that the identical invention need be taught but that to anticipate a claim, the Examiner announces that he "has full latitude to interpret each claim in the broadest reasonable sense." A reference cannot teach every element of the claim if it does not teach the identical invention no matter how much latitude the Examiner

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may believe he has. This is the case with Bertrand *et al.* because Bertrand *et al.* does not teach the identical invention.

Every element of the claimed invention must be literally present, arranged as in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989), citing *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 895, 221 U.S.P.Q. 669, 673; *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771-72, 218 U.S.P.Q. 781, 789 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026, 79 L. Ed. 2d 687, 104 S. Ct. 1284 (1984). Moreover, the identical invention must be shown in as complete detail as is contained in the patent claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920.

The Examiner has intimated that the Bertrand *et al.* reference need not teach every element of the claimed invention, arranged as in the claims, because he has some sort of latitude. That is incorrect. The Examiner also has intimated that the Bertrand *et al.* reference need not disclose the identical invention because of the Examiner's latitude. That is also incorrect. There is no legal precedent to support the Examiner's position.

Additionally, 35 U.S.C. § 103(a) recites that "[a] patent may not be obtained though the invention is not identically disclosed or described as set forth in Section 102 of this title," (emphasis provided) signifying conclusively that Section 102 requires identical disclosure or description. M.P.E.P. § 1504.02 recites that "[i]n design patent applications, the factual inquiry in determining anticipation over a prior art reference is the same as in utility patent applications. That is, the reference 'must be identical in all material respects.'" (emphasis provided). M.P.E.P. § 2122 recites that "[i]n order to constitute anticipatory prior art, a reference must identically disclose the claimed compound" (emphasis provided). Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, arranged as in the claims, or the identical invention, no *prima facie* case of anticipation has been established.

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c. Only Through A Distortion of The Teachings of Bertrand *et al.* Can the Examiner Argue Identity of Invention

M.P.E.P. § 2131.01 indicates that "the examiner should be fully aware of what the claims do not call for, as well as what they do require." Neither has been accomplished in this case. The system of Bertrand *et al.* uses an expert system to provide the user with a simulated business environment—but not for the purpose of generating user interface instructions from a template associated with a selected rule.

As explained in the background of the pending application, software programmers construct user interfaces using programming languages or specialized user interface development tools. The freedom to construct user interfaces comes with the opportunity to make mistakes, resulting in user interfaces that are too complex for their users to understand and use properly. The lack of knowledge by the programmer regarding the exact conditions under which the user interface will be used may result in a user interface that is inappropriate in practice. The system of Bertrand *et al.* suffers from these same problems.

Bertrand *et al.* explains that "once the simulation model, system dynamics model and feedback are completely tested by designers, developers can incorporate [simulated business tasks] in a graphical user interface, e.g., Visual Basic, as a development platform." See paragraph 0884 of Bertrand *et al.* What this shows is that the system of Bertrand *et al.* manually creates user interfaces with programming languages or specialized user interface development tools, which is the traditional practice of creating user interfaces. The system of Bertrand *et al.* is not using its expert system to generate a user interface because its user interfaces are already generated using Visual Basic. The system of Bertrand *et al.* does not need to generate user interface instructions from a template associated with a selected rule using the expert system. Thus, the Office has failed to state a *prima facie* case of anticipation.

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d. Instead of Giving the Claimed Invention the Broadest Reasonable Interpretation Consistent with the Specification, the Examiner Gave Bertrand *et al.* the Broadest, Most Unreasonable Interpretation

M.P.E.P. § 2131.01 provides that "[d]uring patent examination, the claims are given the broadest reasonable interpretation consistent with the specification," (emphasis provided) citing favorably, *In re Morris*, 127 F.3d 1048, 44 USPQ2d 1023 (Fed. Cir. 1997). The specification referred to by the M.P.E.P is the specification of the pending patent application being examined by the Examiner and not the applied reference, such as Bertrand *et al.* The system of Bertrand *et al.* uses an expert system to provide the user with a simulated business environment—but not for the purpose of generating user interface instructions from a template associated with a selected rule.

The requirement of giving the claims the broadest reasonable interpretation consistent with the specification has been ignored and instead the Examiner believes that he has "full latitude to interpret each claim in the broadest reasonable sense." See p. 15 of the Final Office Action. There are no senses that can replace the disclosure provided by Appellant's specification. Appellant's specification discloses the generation of user interface instructions via an expert system. Bertrand *et al.* discusses the use of an expert system to provide the user with a simulated business environment. They are not identical.

For example, the Examiner has alleged that the claimed limitation "the expert system ... generating user interface instructions in accordance with the template associated with the selected rule" can be found at paragraph 0326 of Bertrand *et al.* There is nothing whatsoever at the cited paragraph that can be reasonably interpreted to disclose the claimed limitation. To make this explanation clear, applicant recites again the paragraph 0326 of Bertrand *et al.* in full:

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> The Intelligent Coaching Agent Tool (ICAT) is a suite of tools—a database and a Dynamic Link Library (DLL) run-time engine—used by designers to create and execute just-in-time feedback of Goal Based training. Designers write feedback and rules in the development tools. Once the feedback is set the run-time engine monitors user actions, files rules and composes feedback which describes the business deliverable. (Emphasis provided)

It would appear that the cited portion of Bertrand *et al.* by the Office teaches exactly opposite from the claimed limitation "the expert system ... generating user interface instructions from a template associated with a selected rule." The reason for that is because designers have to manually write feedback and rules in the development tools. The claimed limitation specifies that it is the expert system that generates user interface instructions. That cannot be found in Bertrand *et al.*

The goal of Bertrand *et al.* is to produce an educational tutorial system that analyzes student inputs to determine appropriate feedback to teach new skills. For example, in paragraph 0322, it describes the use of a toolbar by a student to navigate to access features of a business simulation application including feedback. The student can have his business deliverables analyzed and receive feedback by clicking on a TEAM button. Thus, feedback is used to help a student in a business simulation.

Feedback is content which may be presented via a user interface to a user—but feedback as described by Bertrand *et al.* is not a user interface. The system of Bertrand *et al.* principally is concerned with the creation and delivery of feedback but not the generation of a user interface by an expert system. To provide further emphasis, the system of Bertrand *et al.* did not use the

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expert system to produce the toolbar with which the student navigates at paragraph 0322. Even the TEAM button is pre-generated by the system of Bertrand *et al.*

2. Independent Claim 14

Independent Claim 14 is directed to a system for generating user interfaces so that a user may interact with a computer system. The system comprises an application that includes an incomplete user interface and is adapted to store multiple intentions of a user interface designer of the application. Each intention includes a set of parameters and at least one of posing a question to the user, presenting a piece of information to the user, and defining a task for the user to perform. The incomplete user interface of the application is completed when the one or more intentions are realized. The system further comprises an expert system including one or more components for realizing the multiple intentions. The expert system receives one of the multiple intentions and each received intention identifies and activates a corresponding component for realizing the received intention. Each corresponding component programmatically comprises a set of rules extracted from guidelines, conventions, and principles of user interface design. The set of parameters supplied with each received intention aids the corresponding component to choose and execute a rule from the set of rules. Each rule of Claim 14 produces a user interface from a template different from other templates used by other rules.

Among other differences, none of the applied and cited references teaches "an application including an incomplete user interface..., the incomplete user interface of the application being completed when the one or more intentions are realized" as recited in independent Claim 14, among other claimed limitations. The Examiner has argued that the system of Bertrand *et al.* teaches this feature of the claimed invention at paragraphs 0324, 0326, 0389, and 0234. This cannot be correct. Paragraphs 0324, 0326 of Bertrand *et al.* describe the use of development tools by designers to write feedback and rules. There is no mentioning of an application that

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includes an incomplete user interface, which becomes completed when one or more intentions are realized. Paragraph 0389 of Bertrand *et al.* discloses the following:

> When identifying problems, the tutor needs to prompt the student to reflect on a problem and start to point the student towards the answer. The tutor should not tell the student the answer, but instead should attempt to provide an appropriate answer or give the student a question to think about.

It is unclear what this has to do with Claim 14, which recites "a system for generating user interfaces so that a user may interact with a computer system." Paragraph 0234 of Bertrand *et al.* similarly fails to disclose anything that is even remotely relevant.

The Examiner in response explained that he has "full latitude to interpret each claim in the broadest reasonable sense." See p. 14 of the Final Office Action. The Examiner concluded that "[t]he incomplete user interface is simply the student's initial answer to the tutor." The Examiner's interpretation does not make sense. One with ordinary skill in the user interface art knows the difference between a user interface and the information captured or displayed by the user interface. A student's answer is the information captured by a user interface but it is not the user interface.

Claim 14 recites "the incomplete user interface of the application being completed when the one or more intentions are realized." Claim 14 further recites that "an expert system including one or more components for realizing multiple intentions" and an intention is realized when a rule is executed "producing a user interface from a template different from other templates used by other rules," among other limitations. The Examiner explained that the above claim language means "the tutor has the intention to have the student complete the answer and

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when the full answer is established, one or more intentions are realized." See p. 14 of the Final Office Action. This is just ludicrous.

The essence of the claimed invention is the completion of an incomplete user interface by the expert system. It is the expert system that completes the incomplete user interface so as to allow a user interface to adapt to externalities that can not be predicted with certainty at the time a user interface is designed. The tutor of Bertrand *et al.* is attempting to prompt students to reflect on mistakes made in the business simulation by pointing the student toward an answer. See p. 0388 of Bertrand *et al.* There is no completion of a user interface here. To carry the Examiner's analogy to its illogical conclusion, suppose the tutor can be likened to the claimed expert system. In the interpretation of the Examiner, it is the student that completes the answer, not the tutor. But in the claimed invention, it is the expert system that completes the intention of the user interface designer to complete an incomplete user interface. Appellant stops the analogy here, for to go further is to continue with the ridiculous interpretation of Claim 14. Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

Appellant incorporates by reference the arguments discussed in connection with Claim 13 as if the discussed arguments were set forth here in full.

3. Dependent Claim 15

Claim 15 is dependent on Claim 14 and recites that the produced user interface includes at least one of a graphical user interface, a command-line interface, and an audio user interface. The Examiner has indicated that p. 0081 of Bertrand *et al.* discloses the claimed limitation. Paragraph 0081 of Bertrand *et al.* discloses the following:

> A preferred embodiment of a system in accordance with the present invention is preferably practiced in the context of a personal computer

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such as an IBM compatible personal computer, Apple Macintosh computer or UNIX based workstation. A representative hardware environment is depicted in FIG. 1, which illustrates a typical hardware configuration of a workstation in accordance with a preferred embodiment having a central processing unit 110, such as a microprocessor, and a number of other units interconnected via a system bus 112. The workstation shown in FIG. 1 includes a Random Access Memory (RAM) 114, Read Only Memory (ROM) 116, an I/O adapter 118 for connecting peripheral devices such as disk storage units 120 to the bus 112, a user interface adapter 122 for connecting a keyboard 124, a mouse 126, a speaker 128, a microphone 132, and/or other user interface devices such as a touch screen (not shown) to the bus 112, communication adapter 134 for connecting the workstation to a communication network (e.g., a data processing network) and a display adapter 136 for connecting the bus 112 to a display device 138. The workstation typically has resident thereon an operating system such as the Microsoft Windows NT or Windows/95 Operating System (OS), the IBM OS/2 operating system, the MAC OS, or UNIX operating system. Those skilled in the art will appreciate that the present invention may also be implemented on platforms and operating systems other than those mentioned.

It is unclear what this has to do with Claim 15, which recites that "the produced user interface includes at least one of a graphical user interface, a command-line interface, and an audio user interface." Paragraph 0081 of Bertrand *et al.* provides no discussion for producing a user interface from an incomplete user interface as recited in Claims 14 and 15. Because the

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Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

Appellant incorporates by reference the arguments discussed in connection with Claim 14 as if the discussed arguments were set forth here in full.

4. Dependent Claim 16

Claim 16 is dependent on Claim 14 and recites a source of external factors. The source of external factors contains information related to the operating environment of the application as well as the background of the user so as to aid the corresponding component to choose and execute a rule from the set of rules. The Examiner has indicated that paragraphs 0137, 0341, and FIGURE 8 of Bertrand *et al.* discloses the claimed limitation. Paragraph 0137 of Bertrand *et al.* discloses the following:

> Business simulation in accordance with a preferred embodiment delivers training curricula in an optimal manner. This is because such applications provide effective training that mirrors a student's actual work environment. The application of skills "on the job" facilitates increased retention and higher overall job performance. While the results of such training applications are impressive, business simulations are very complex to design and build correctly. These simulations are characterized by a very open-ended environment, where students can go through the application along any number of paths, depending on their learning style and prior experiences/knowledge.

Paragraph 0341 of Bertrand *et al.* discloses the following:

> Any project which is creating a Goal-Based Scenario (GBS) business simulation or an Integrated Performance Support (IPS) system to help

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> users understand and create business deliverables can profit from technology in accordance with a preferred embodiment. A GBS allows students to learn in a comprehensive simulated environment. Students work in a simulated environment to accomplish real world tasks, and when they make mistakes, remediation is provided to help identify and correct the mistakes. The hands-on experience of the simulated environment and the timely remediation account for the high retention rate from subjects presented utilizing a system in accordance with a preferred embodiment. A system in accordance with a preferred embodiment can be used in conjunction with an IPS to help users develop deliverables. If a customer service representative (CSR) is completing a form while conducting a phone conversation, the ICAT can be used to observe how the task is completed to provide a live analysis of mistakes.

It is unclear what this has to do with Claim 16, which recites that "a source of external factors, the source of external factors containing information related to the operating environment of the application as well as the background of the user so as to aid the corresponding component to choose and execute a rule from the set of rules." Appellant is not sure the reason for the citation of FIGURE 8 of Bertrand *et al.* While paragraphs 0137 and 0341 of Bertrand *et al.* did disclose the word "environment," Appellant does not think that this alone is good enough to reject the entirety of Claim 16, which coincidentally also includes the word "environment." There is no account of the "background of the user" to generate a user interface by the system of Bertrand *et al.* Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

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Appellant incorporates by reference the arguments discussed in connection with Claim 15 as if the discussed arguments were set forth here in full.

5. Dependent Claim 17

Claim 17 is dependent on Claim 16 and recites that each external factor includes at least one of the type of computer on which the application is running, the type of operating system on which the application is running, the types of available input devices, the types of available output devices, and the background of the user. The Examiner has indicated that paragraph 0109 of Bertrand *et al.* discloses the claimed limitation. Paragraph 0109 of Bertrand *et al.* discloses the following:

> The development of graphical user interfaces began to turn this procedural programming arrangement inside out. These interfaces allow the user, rather than program logic, to drive the program and decide when certain actions should be performed. Today, most personal computer software accomplishes this by means of an event loop which monitors the mouse, keyboard, and other sources of external events and calls the appropriate parts of the programmer's code according to actions that the user performs. The programmer no longer determines the order in which events occur. Instead, a program is divided into separate pieces that are called at unpredictable times and in an unpredictable order. By relinquishing control in this way to users, the developer creates a program that is much easier to use. Nevertheless, individual pieces of the program written by the developer still call libraries provided by the operating system to accomplish certain tasks, and the programmer must still determine the

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flow of control within each piece after it's called by the event loop. Application code still "sits on top of" the system.

It is unclear what this has to do with Claim 17, which recites that "each external factor includes at least one of the type of computer on which the application is running, the type of operating system on which the application is running, the types of available input devices, the types of available output devices, and the background of the user." The paragraph 0109 of Bertrand *et al.* explains the history of the development of the graphical user interface but fails to explain how the external factors recited by Claim 17 can be used to complete an incomplete user interface by an expert system. Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

Appellant incorporates by reference the arguments discussed in connection with Claim 16 as if the discussed arguments were set forth here in full.

6. Dependent Claim 18

Claim 18 is dependent on Claim 14 and recites that each parameter from the set of parameters includes at least one of textual information, a set of choices from which the user is expected to make a selection, pieces of data which the user is allowed to manipulate, a default response to a question posed by the user, an indication that the user is required to respond to the question, an indication that the user may opt out from responding to the question, a type of data that is expected to be received in response to an interaction with the user, a set of constraints on the dimensions of the generated user interface, and an indication of the visual style which the generated user interface may take. The Examiner has indicated that paragraph 0326 and FIGURE 46 of Bertrand *et al.* discloses the claimed limitation. The paragraph 0326 has been set

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forth in full above. There is nothing in the paragraph 0326 and FIGURE 46 that discloses the claimed invention.

The set of parameters as recited in Claim 18 is associated with an intention, which when realized by an expert system, an incomplete user interface can be completed. Bertrand *et al.* fails to disclose the above cited limitation. Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

Appellant incorporates by reference the arguments discussed in connection with Claim 17 as if the discussed arguments were set forth here in full.

7. Independent Claims 19 and 25

Independent Claim 19 is a method and independent Claim 25 is a computer-readable medium having computer-executable instructions for implementing the method of generating user interfaces by an expert system for a user to interact with a computer system. The method comprises an act of receiving a user interface goal by the expert system. The user interface goal includes at least one of a question to be posed to the user, a piece of information to be communicated to the user, and a task to be performed by the user. The method further recites an act of receiving a set of parameters by the expert system. Each parameter includes at least one of information for presenting to the user, information for the task to be performed by the user, and information for constraining the generated user interface. The method yet further recites an act of generating a user interface by selecting a code module from a set of code modules. Each code module is designed to generate user interfaces from multiple templates. The act of selecting a code module includes selecting a rule from a set of rules extracted from guidelines, conventions, and principles of user interface design. The act of selecting a rule is aided by the set of

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parameters. The user interface is produced by the method of Claims 19 and 25 from a template when the selected rule is executed.

The Examiner has indicated that paragraphs 0324, 0326, 0389, 0234, and 0083 of Bertrand *et al.* disclose the claimed invention. The paragraphs 0324, 0326, 0389, 0234, have been set forth in full above. There is nothing in the paragraphs 0324, 0326, 0389, 0234 that discloses the claimed invention. Paragraph 0083 of Bertrand *et al.* discloses the following:

> OOP is a process of developing computer software using objects, including the steps of analyzing the problem, designing the system, and constructing the program. An object is a software package that contains both data and a collection of related structures and procedures. Since it contains both data and a collection of structures and procedures, it can be visualized as a self-sufficient component that does not require other additional structures, procedures or data to perform its specific task. OOP, therefore, views a computer program as a collection of largely autonomous components, called objects, each of which is responsible for a specific task. This concept of packaging data, structures, and procedures together in one component or module is called encapsulation.

It is unclear what this has to do with Claims 19 and 25. The paragraph 0083 of Bertrand *et al.* explains the basics of object-oriented programming but fails to explain the generation of a user interface by an expert system as defined by Claims 19 and 25. For example, there is nothing in Bertrand *et al.* that discloses "receiving the user interface goal by the expert system" as recited by Claims 19 and 25. Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

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Appellant incorporates by reference the arguments discussed in connection with Claim 18 as if the discussed arguments were set forth here, in full.

8. Dependent Claims 20 and 26

Claim 20 is dependent on Claim 19 and Claim 26 is dependent on Claim 25 and these claims recite an act of examining selectively a set of external factors by the expert system. Each factor is selected from the operating environment of the computer system and the background of the user. The act of selecting a rule is further aided by the set of external factors. The Examiner has indicated that paragraphs 0137, 0341, and FIGURE 8 of Bertrand *et al.* disclose the claimed invention. The paragraphs 0137 and 0341 have been set forth in full above. There is nothing in the paragraphs 0137 and 0341 that discloses the claimed invention.

As previously cited, neither paragraph 0137 nor 0341 discloses the act of examining selectively a set of external factors by the expert system. Appellant is not sure the reason for the citation of FIGURE 8 of Bertrand *et al.* While paragraphs 0137 and 0341 of Bertrand *et al.* did disclose the word "environment," that is not sufficient to reject the entirety of Claims 20 and 26, which coincidentally also includes the word "environment." Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

Appellant incorporates by reference the arguments discussed in connection with Claims 19 and 25 as if the discussed arguments were set forth here, in full.

9. Dependent Claims 21 and 27

Claim 21 is dependent on Claim 19 and Claim 27 is dependent on Claim 25 and these claims recite that a user interface goal includes at least one of making the user supply a single string of text, making the user supply a single number, making the user pick a single item from a list, making the user pick several items from a list, making the user arrange the items in a list in a

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preferred order, making the user manage a list of items, making the user organize items in a given structure, and making the user apply one or more operations on a selection of items in a list. The Examiner has indicated that FIGURE 8 of Bertrand *et al.* disclose the claimed invention. Bertrand *et al.* describes FIGURE 8 as illustrating "an instantiated domain model." Appellant has no idea what this has to do with the claimed invention and no explanation is provided by the Examiner. There is nothing in FIGURE 8 that discloses the claimed invention. Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

Appellant incorporates by reference the arguments discussed in connection with Claims 20 and 26 as if the discussed arguments were set forth here, in full.

10. Dependent Claims 22 and 28

Claim 22 is dependent on Claim 19 and Claim 28 is dependent on Claim 25 and recite that the method is executed at run time while other applications are running. The method is the method as defined by Claims 19 and 25. The Examiner indicated that p. 0081 and FIGURE 8 of Bertrand *et al.* disclose the claimed invention. There is nothing in p. 0081 and FIGURE 8 that discloses the claimed invention, which requires the method for generating user interfaces by an expert system to be executing at run time while other applications are running. Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

Appellant incorporates by reference the arguments discussed in connection with Claims 21 and 27 as if the discussed arguments were set forth here, in full.

11. Dependent Claims 23 and 29

Claim 23 is dependent on Claim 19 and Claim 29 is dependent on Claim 25 and recite that the method is executed at design time so that user interfaces generated by the method are

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stored on storage media. The Examiner has indicated that p. 0081 and FIGURE 8 of Bertrand *et al.* discloses the claimed invention. There is nothing in p. 0081 and FIGURE 8 that discloses the claimed invention, which requires the method for generating user interfaces by an expert system to be executed at run time while other applications are running. Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

Appellant incorporates by reference the arguments discussed in connection with Claims 21 and 27 as if the discussed arguments were set forth here, in full.

12. Dependent Claims 24 and 30

Claim 24 is dependent on Claim 19 and Claim 30 is dependent on Claim 25 and recite that the generated user interface includes a pagefunction. The pagefunction is described on page 17, lines 5-8 of the pending specification. The Examiner has indicated that p. 0129 of Bertrand *et al.* disclose the claimed invention. Paragraph 0083 of Bertrand *et al.* discloses the following:

> With Java, developers can create robust User Interface (UI) components. Custom "widgets" (e.g., real-time stock tickers, animated icons, etc.) can be created, and client-side performance is improved. Unlike HTML, Java supports the notion of client-side validation, offloading appropriate processing onto the client for improved performance. Dynamic, real-time Web pages can be created. Using the above-mentioned custom UI components, dynamic Web pages can also be created.

There is nothing in p. 0129 that discloses the claimed invention, which requires the method to generate a user interface that includes a pagefunction. Evidently, the Examiner equates "pagefunction" to Web pages but a pagefunction may not be available over the Web.

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Because the Examiner has failed to show that Bertrand *et al.* discloses every element of the claimed invention, no *prima facie* case of anticipation has been established.

Appellant incorporates by reference the arguments discussed in connection with Claims 22 and 28 as if the discussed arguments were set forth here, in full.

C. A Recap of the Claimed Invention Clearly Shows that the Cited and Applied References Do Not Teach, Let Alone Render Unpatentable, the Claimed Invention

Clearly Bertrand *et al.*, among other cited references, alone much less in combination, fails to teach or suggest the subject matter of Claims 13 and 31. More specifically, none of these references, alone much less in combination, teaches or suggests "in response to receiving said at least one intention and its associated set of parameters, the expert system...generating user interface instructions from a template associated with the selected rule" as recited in Claims 13 and 31, among other claimed limitations. As will be readily appreciated from the foregoing discussion, none of the applied and cited references teaches or suggests the subject matter of Claims 13 and 31. As a result, Appellant submits that Claims 13 and 31 are clearly allowable in view of the teachings of the references.

Independent Claim 14 is directed to a system. Among other differences, none of the applied and cited references teaches "an application including an incomplete user interface..., the incomplete user interface of the application being completed when the one or more intentions are realized" as recited in independent Claim 14. For generally the same reasons discussed above with respect to Claim 13, Appellant submits that the subject matter of Claim 14 is neither taught nor suggested by the applied and cited references, and thus, Claim 14 is also allowable.

With respect to dependent Claims 15-18, all of which depend directly or indirectly from Claim 14, it is also clear that the subject matter of these claims is neither taught nor suggested by the applied and cited references, namely, Bertrand *et al.* Claims 15-18 all have limitations that

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are clearly neither taught nor suggested by any of the applied and cited references, particularly when the limitations are considered in combination with the recitations of the claims from which these claims individually depend. In summary, Claims 15-18 are submitted to be allowable for reasons in addition to the reasons why Claim 14 is submitted to be allowable.

Independent Claim 19 is directed to a method. The applied and cited references fail to teach "generating a user interface by selecting a code module..., the act of selecting a code module including selecting a rule from a set of rules extracted from guidelines, conventions, and principles of user interface design..." as recited in Claim 19 among other limitations. For generally the same reasons discussed above with respect to Claims 13 and 14, Appellant submits that the subject matter of Claim 19 is neither taught nor suggested by the applied and cited references, and thus, Claim 19 is also allowable.

With respect to dependent Claims 20-24, all of which depend directly or indirectly from Claim 19, it is also clear that the subject matter of these claims is neither taught nor suggested by the applied and cited references. Claims 20-24 all have limitations that are clearly neither taught nor suggested by any of the applied and cited references, particularly when the limitations are considered in combination with the recitations of the claims from which these claims individually depend. In summary, Claims 20-24 are submitted to be allowable for reasons in addition to the reasons why Claim 19 is submitted to be allowable.

Independent Claim 25 is directed to a computer-readable medium. In many ways, the subject matter of independent Claim 25 mirrors the subject matter of the method recited in Claim 19, albeit in a different manner. For reasons generally similar to reasons discussed above with respect to Claims 13, 14, and 19, Claim 25 is submitted to recite subject matter that is clearly neither taught nor suggested by the applied and cited references. With respect to dependent Claims 26-30, all of which depend directly or indirectly from Claim 25, it is also clear

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that the subject matter of these claims is neither taught nor suggested by the applied and cited references. Specifically, none of the applied and cited references teaches or even suggests "generating a user interface by selecting a code module..., the act of selecting a code module including selecting a rule from a set of rules extracted from guidelines, conventions, and principles of user interface design..." as recited in Claim 25. As a result, Appellant respectfully submits that Claim 25 and its dependent Claims 26-30 is allowable.

In light of the foregoing remarks, it is clear that none of the applied and cited references teaches, let alone renders unpatentable, the claimed inventions recited in Claims 13, 14-31. The applied and cited references are all directed to improving a business simulation to teach students better business practices without financial risk; work in an entirely different manner from the present invention; or have nothing to do with the present invention. The present invention is directed to an entirely different concept and solution. The present application is directed to the generation of a user interface via an expert system.

In view of the foregoing remarks, Appellant submits that all of the claims in the present application are patentably distinguishable over the teachings of Bertrand *et al.* and cited references. Therefore, it is submitted that the rejections of Claims 13-31 were erroneous, and reversal of the rejections is respectfully requested.

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VIII. CLAIMS APPENDIX

1-11. (Canceled)

12. (Canceled without prejudice and disclaimer.)

13. A method of producing a user interface for an application running on a computer having an associated display, said method comprising:

a) in response to user interface designer inputs, said application producing at least one intention, said at least one intention having an associated set of parameters;

b) supplying said at least one intention and its associated set of parameters to an expert system;

c) in response to receiving said at least one intention and its associated set of parameters, the expert system:

i) selecting a code module from a multitude of code modules;

ii) selecting a rule from a set of rules within the selected code module; and

iii) generating user interface instructions from a template associated with the selected rule;

d) supplying said user interface instructions to said application; and

e) in response to receiving said user interface instructions, said application producing a user interface on said display.

14. A system for generating user interfaces so that a user may interact with a computer system, the system comprising:

an application including an incomplete user interface and being adapted to store multiple intentions of a user interface designer of the application, each intention including a set of parameters and at least one of posing a question to the user, presenting a piece of information to

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the user, and defining a task for the user to perform, the incomplete user interface of the application being completed when the one or more intentions are realized; and

an expert system including one or more components for realizing the multiple intentions, the expert system receiving one of the multiple intentions and each received intention identifying and activating a corresponding component for realizing the received intention, each corresponding component programmatically comprising a set of rules extracted from guidelines, conventions, and principles of user interface design, the set of parameters supplied with each received intention aiding the corresponding component to choose and execute a rule from the set of rules, each rule producing a user interface from a template different from other templates used by other rules.

15. The system of Claim 14, wherein the produced user interface includes at least one of a graphical user interface, a command-line interface, and an audio user interface.

16. The system of Claim 14, further comprising a source of external factors, the source of external factors containing information related to the operating environment of the application as well as the background of the user so as to aid the corresponding component to choose and execute a rule from the set of rules.

17. The system of Claim 16, wherein each external factor includes at least one of the type of computer on which the application is running, the type of operating system on which the application is running, the types of available input devices, the types of available output devices, and the background of the user.

18. The system of Claim 14, wherein each parameter from the set of parameters includes at least one of textual information, a set of choices from which the user is expected to

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make a selection, pieces of data which the user is allowed to manipulate, a default response to a question posed by the user, an indication that the user is required to respond to the question, an indication that the user may opt out from responding to the question, a type of data that is expected to be received in response to an interaction with the user, a set of constraints on the dimensions of the generated user interface, and an indication of the visual style which the generated user interface may take.

19. A method for generating user interfaces by an expert system for a user to interact with a computer system, comprising:

receiving a user interface goal by the expert system, the user interface goal including at least one of a question to be posed to the user, a piece of information to be communicated to the user, and a task to be performed by the user;

receiving a set of parameters by the expert system, each parameter including at least one of information for presenting to the user, information for the task to be performed by the user, and information for constraining the generated user interface; and

generating a user interface by selecting a code module from a set of code modules, each code module being designed to generate user interfaces from multiple templates, the act of selecting a code module including selecting a rule from a set of rules extracted from guidelines, conventions, and principles of user interface design, the act of selecting a rule being aided by the set of parameters, the user interface being produced from a template when the selected rule is executed.

20. The method of Claim 19, further comprising examining selectively a set of external factors by the expert system, each factor being selected from the operating environment

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of the computer system and the background of the user, the act of selecting a rule being further aided by the set of external factors.

21. The method of Claim 19, wherein a user interface goal includes at least one of making the user supply a single string of text, making the user supply a single number, making the user pick a single item from a list, making the user pick several items from a list, making the user arrange the items in a list in a preferred order, making the user manage a list of items, making the user organize items in a given structure, and making the user apply one or more operations on a selection of items in a list.

22. The method of Claim 19, wherein the method is executed at run time while other applications are running.

23. The method of Claim 19, wherein the method is executed at design time so that user interfaces generated by the method are stored on storage media.

24. The method of Claim 19, wherein the generated user interface includes a pagefunction.

25. For use in a computer system, a computer-readable medium having computer-executable instructions for performing a method for generating user interfaces by an expert system for a user to interact with the computer system, comprising:

receiving a user interface goal by the expert system, the user interface goal including at least one of a question to be posed to the user, a piece of information to be communicated to the user, and a task to be performed by the user;

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receiving a set of parameters by the expert system, each parameter including at least one of information for presenting to the user, information for the task to be performed by the user, and information for constraining the generated user interface; and

generating a user interface by selecting a code module from a set of code modules, each code module being designed to generate user interfaces from multiple templates, the act of selecting a code module including selecting a rule from a set of rules extracted from guidelines, conventions, and principles of user interface design, the act of selecting a rule being aided by the set of parameters, the user interface being produced from a template when the selected rule is executed.

26. The computer-readable medium of Claim 25, further comprising examining selectively a set of external factors by the expert system, each factor being selected from the operating environment of the computer system and the background of the user, the act of selecting a rule being further aided by the set of external factors.

27. The computer-readable medium of Claim 25, wherein a user interface goal includes at least one of making the user supply a single string of text, making the user supply a single number, making the user pick a single item from a list, making the user pick several items from a list, making the user arrange the items in a list in a preferred order, making the user manage a list of items, making the user organize items in a given structure, and making the user apply one or more operations on a selection of items in a list.

28. The computer-readable medium of Claim 25, wherein the method is executed at run time while other applications are running.

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29. The computer-readable medium of Claim 25, wherein the method is executed at design time so that user interfaces generated by the method are stored on storage media.

30. The computer-readable medium of Claim 25, wherein the generated user interface includes a pagefunction.

31. For use in a computer system, a computer-readable medium having computer-executable instructions for performing a method of producing a user interface for an application running on a computer having an associated display, said method comprising:

a) in response to user interface designer inputs, said application producing at least one intention, said at least one intention having an associated set of parameters;

b) supplying said at least one intention and its associated set of parameters to an expert system;

c) in response to receiving said at least one intention and its associated set of parameters, the expert system:

i) selecting a code module from a multitude of code modules;

ii) selecting a rule from a set of rules within the selected code module; and

iii) generating user interface instructions from a template associated with the selected rule;

d) supplying said user interface instructions to said application; and

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e) in response to receiving said user interface instructions, said application producing a user interface on said display.

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IX. EVIDENCE APPENDIX

NONE.

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X. RELATED PROCEEDINGS APPENDIX

NONE.

Respectfully submitted,

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